

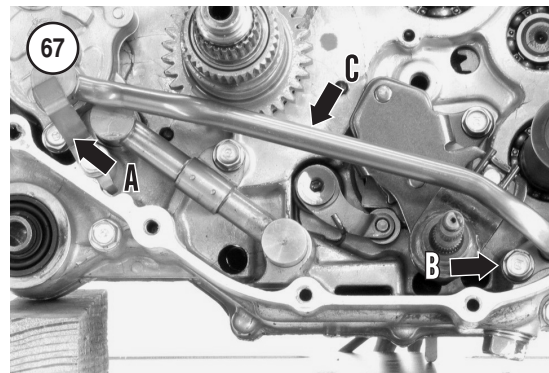
9. Install the rear crankcase cover as described in this chapter.

GEARSHIFT LINKAGE

The transmission gears are shifted manually on FM and TM models using a typical foot-operated gearshift lever. On FE and TE models, gears shifting is accomplished using the Electric Shift Program (ESP), which is described in Chapter Nine. FE and TE models are equipped with essentially the same gearshift components as the FM and TM models. On FM and TM models, the gearshift lever is attached to the gearshift spindle. On FE and TE models, the gearshift lever is absent and the gearshift spindle has a hex end so it may be used for emergency shifting purposes.

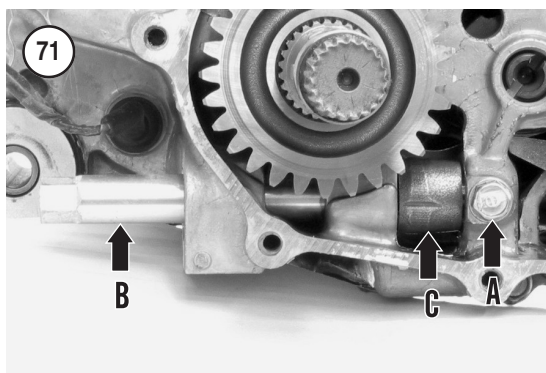
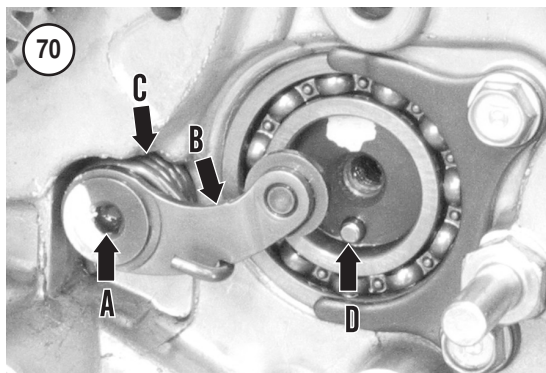
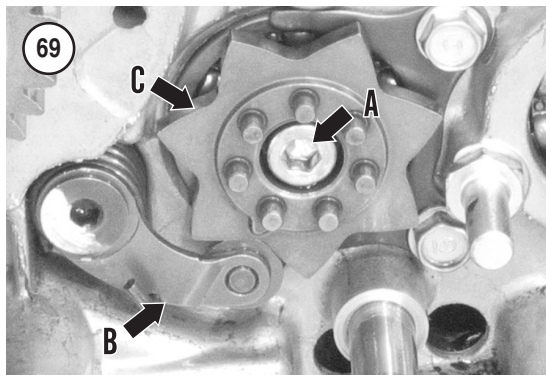
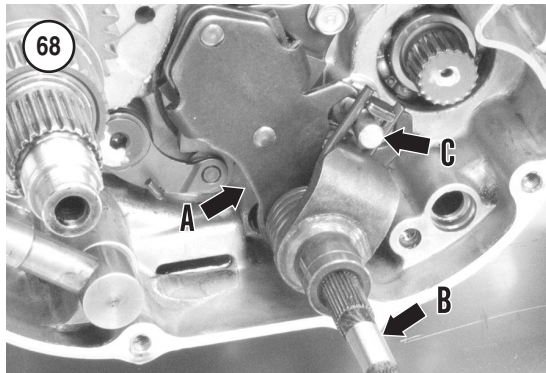
The gearshift linkage assembly is mounted on the front side of the engine, behind the clutch cover. While the linkage is accessible without removing the engine, servicing the gearshift spindle assembly will require engine removal.

Refer to **Figure 66** when servicing the gearshift linkage assembly in the following sections.



Removal

1. If the engine is installed in the frame, remove the gearshift pedal.
2. Remove the clutch cover (Chapter Six).
3. Remove the centrifugal clutch and change clutch assemblies (Chapter Six).
4. When servicing the gearshift spindle assembly, remove the rear crankcase cover as described in this chapter.



5. Remove the oil transfer pipe retaining bracket (A, **Figure 67**). Remove the retaining bolt (B, **Figure 67**), then remove the oil pipe (C).
6. Remove the gearshift plate assembly (A, **Figure 68**).
7. Remove the shift cam retaining bolt (A, **Figure 69**).
8. Pry or force the stopper arm (B, **Figure 69**) away from the shift cam (C) using a screwdriver, then remove the shift cam.
9. Remove the bolt (A, **Figure 70**), stopper arm (B), washer and return spring (C).
10. Remove the gearshift spindle retaining bolt (A, **Figure 71**) on the rear crankcase.
11. Withdraw the gearshift spindle (B, **Figure 71**), then remove the spindle arm (C).

NOTE

*The engine crankcase must be disassembled as described in this chapter for access to the sub-gearshift spindle (B, **Figure 68**).*

Inspection

Refer to **Figure 66** when inspecting the gearshift linkage assembly. Replace excessively worn or damaged parts as described in this section.

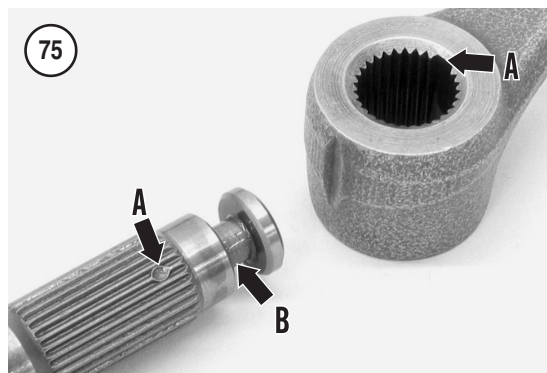
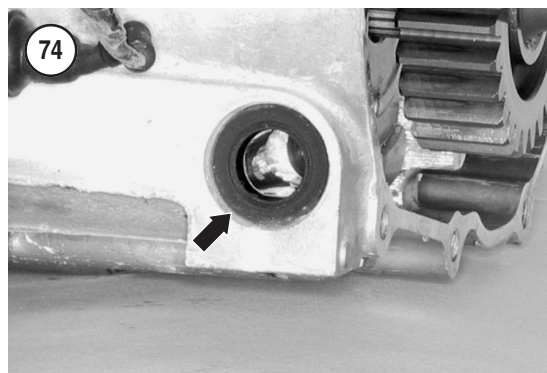
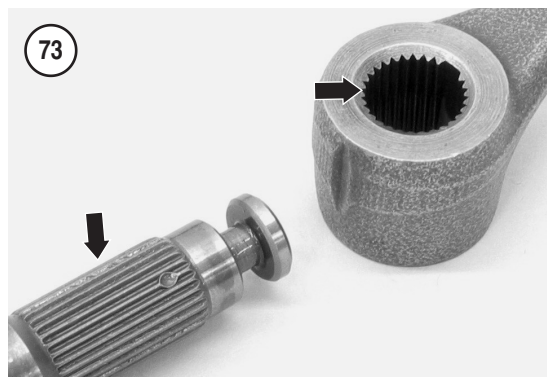
1. Clean and dry all parts.
2. Inspect the sub-gearshift spindle (B, **Figure 68**) for damaged splines and straightness. If necessary, disassemble the crankcase to remove the sub-gearshift spindle.
4. Inspect the drum shifter for wear, cracks or other damage.
5. Inspect the stopper arm assembly for:
 - a. Damaged stopper arm.
 - b. Worn or damaged roller.
 - c. Weak or damaged return spring.
6. Inspect the gearshift plate assembly (**Figure 72**) for:
 - a. Damaged gearshift arm.
 - b. Weak or damaged return spring.
7. Inspect the gearshift spindle dust seal and needle bearings (installed in the front crankcase cover) for damage. Note the following:
 - a. To replace the oil seal, refer to *Seals* in Chapter One. Install the oil seal with the closed side facing out.
 - b. To replace the needle bearings, first remove the bearing with a blind bearing remover.

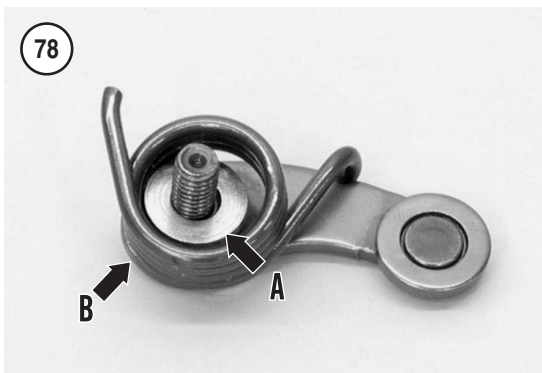
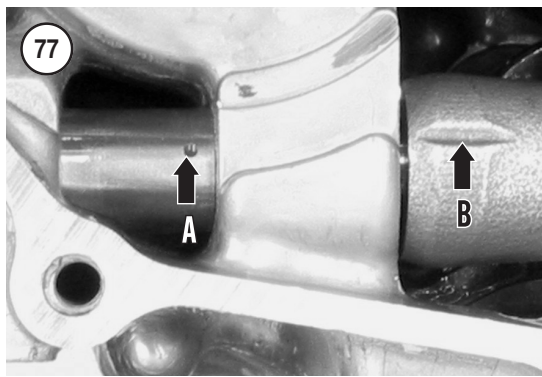
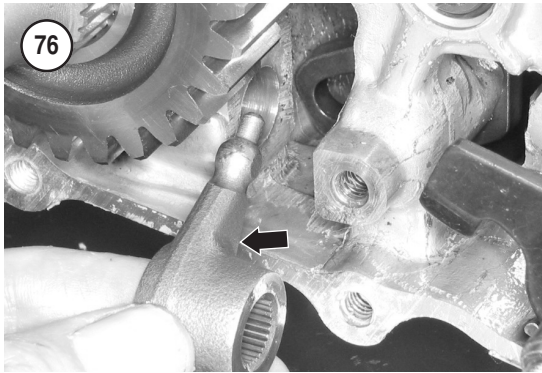
Then inspect the bearing mounting bores for cracks or other damage. Press in the new bearings.

8. Inspect the splines on the gearshift spindle and spindle arm (**Figure 73**).
9. If necessary, replace the gearshift spindle oil seal (**Figure 74**). Install the oil seal so the flat side is out.

Installation

1. If the gearshift spindle assembly was removed, install it as follows:
 - a. Pack the oil seal lip (**Figure 74**) with a waterproof grease.
 - b. Note the master splines on the spindle (A, **Figure 75**) and spindle arm and the end groove (B) on the spindle. Insert the gearshift spindle partway into the crankcase.
 - c. Install the spindle arm so the arm is on the left side (**Figure 76**). The arm must engage the slot in the sub-gearshift arm.
 - d. Align the punch mark on the spindle (A, **Figure 77**) with the casting indentation (B) on the spindle arm. This should align the master splines. Insert the spindle fully into the arm.
 - e. Apply medium strength threadlock to the retaining bolt threads. Make sure the spindle is fully inserted, then install the retaining bolt (A, **Figure 71**) so the pin on the bolt end fits into the retaining groove on the end of the spindle.
 - f. Tighten the retaining bolt securely.
2. Install the stopper arm assembly as follows:
 - a. Install the bolt through the stopper arm (roller side), then install the washer onto the bolt (A, **Figure 78**).
 - b. Hook the return spring (B, **Figure 78**) onto the stopper arm.
 - c. Apply medium strength threadlock to the bolt threads, then install the stopper arm assembly as shown in **Figure 70**. Make sure the return spring is hooked onto the stopper arm as shown in **Figure 70**. Tighten the stopper arm bolt (A, **Figure 70**) to 12 N•m (106 ft.-lb.).
 - d. Push the stopper arm down and release it. It should move under spring pressure with no binding.





NOTE

If the stopper arm does not move, the bolt is not centered through the stopper arm, washer or spring. Loosen the bolt and reinstall it.

3. Install the dowel pin (D, **Figure 70**) into the shift drum hole if it was removed.
4. Pry the stopper arm away from the shift drum, then install the drum shifter cam (C, **Figure 69**) onto the dowel pin and shift drum. Release the stopper arm.
5. Apply medium strength threadlock to the cam bolt threads and install it (A, **Figure 69**). Tighten the bolt to 23 N•m (17 ft.-lb.).
6. Install the gearshift plate assembly (A, **Figure 68**). Align the master splines on the plate hub and sub-gearshift spindle. Fit the spring ends around the crankcase stud (C, **Figure 68**).
7. Install new O-rings onto the oil transfer pipe (**Figure 79**). Lubricate the O-rings with engine oil, then install the oil pipe (C, **Figure 67**), bolt (B) and bracket (A).
8. Install the rear crankcase cover as described in this chapter.
9. Install the change clutch and centrifugal clutch assemblies (Chapter Six).
10. Install the clutch cover (Chapter Six).
11. Install the engine as described in this chapter.

REVERSE SHAFT ASSEMBLY

The reverse shaft assembly consists of the reverse control lever and shaft assembly mounted on the back side of the engine.

Removal/Inspection/Installation

1. Remove the engine from the frame as described in this chapter.
2. Remove the rear crankcase cover as described in this chapter.
3. On FM and TM models, remove the washer from the reverse shaft.

NOTE

*FE and TE models are shown in **Figure 80**. FM and TM models are similar.*

Copyright of Honda TRX350 RANCHER, 2000-2006 is the property of Penton Media, Inc. ("Clymer") and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.